

SAURER.



**Reliable, durable,
resistant.**

Temco Separator Rollers VR



Saurer provides high quality market leading components used for the production of filament yarns and synthetic fibres and have a wide application across various industries.

Saurer prides itself on the breadth and quality of its offering, providing under the product range Temco all the components required to improve the quality in melt spinning, texturing, twisting and covering. Saurer provides a full end-to-end solution of components for yarn production that include bearings, air jets, texturing discs, texturing cots & aprons and twist stoppers.

Features and benefits

- Use of high quality bearings**
- Yarn gentle roller shells**
- Corrosion resistance**
- Ensures stable running**
- Maximum lifetime due to optimized bearing load capacity**



Guiding and deflection of continuous materials

Saurer has developed and produced separator rollers for more than 50 years. Originally, they were used for yarn guidance, drawing and thread-path wrap angles on draw-twisting machines. Today, Temco's Separator Rollers are used in a broad range of applications, and in some of the most diverse processes.

To satisfy these applications, not only knowledge and experience in low-friction bearing manufacture are necessary, but a high degree of competence and authority concerning the production and subsequent treatment of synthetic yarns and textiles are of paramount importance.

Influence of yarn count

With fine yarns, low starting moment of the separator roller must be ensured so that there is no loss of adhesion with the separator roller surface on start-up. Loss of adhesion brings about yarn slippage, which intensifies wear on the separator roller surface and can cause filament damage. A small rotating mass of the separator roller and low friction moment of the bearing guarantee a low starting moment. With coarser yarns, strong radial forces can adversely affect the separator roller. By use of a suitable bearing construction, Saurer optimizes the bearing load capacity for each respective application. Thus, the lifetime of the separator roller is maximized, despite the high demands imposed on it.

Machine suitability

The majority of the Temco Separator Rollers are available with fitments suitable for the most commonly used textile machines. More detailed information on the respective separator rollers is available in the attached product overview and technical data sheets.



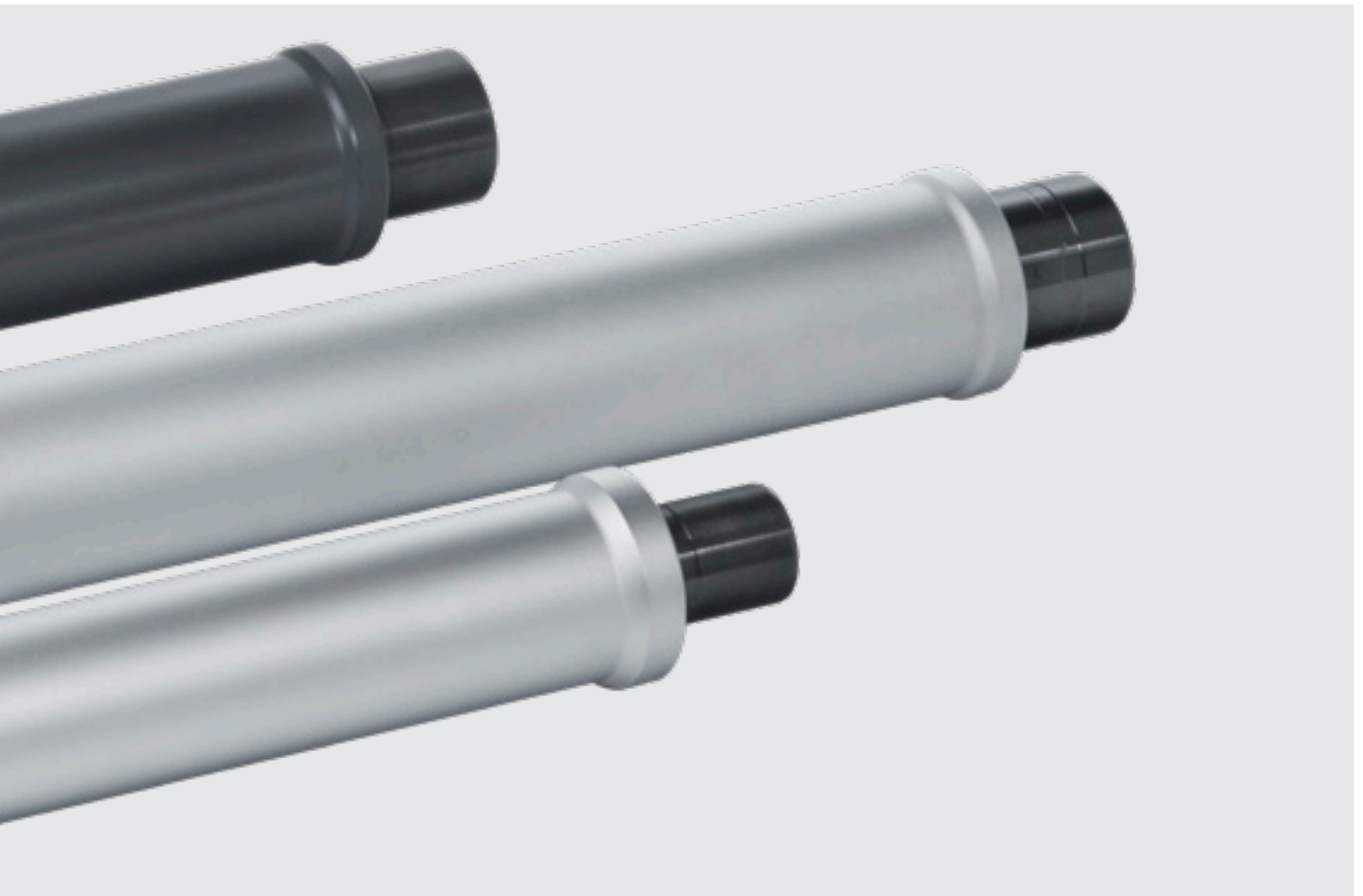
Guiding and deflection of continuous materials

General requirements

In principle, separator rollers serve to support the production process without any negative effect on yarn quality. The bearings used must be of the highest quality to ensure low friction moment, durability and stable running.

Surfaces

Particularly high demands are imposed on separator roller surfaces, which must be corrosion resistant against the various qualities of spin preparation types. Saurer's selection of high-quality materials and coatings, together with special manufacturing methods, guarantees the necessary corrosion resistance. The surface characteristic of the separator roller must not damage the yarn; simultaneously, the coating surface must have sufficient roughness to avoid any single filament adherence to its surface. This is achieved by the orange-peel surface effect of high-quality hard chrome alloys and particularly abrasion resistant ceramic coatings.



Separator rollers in the production process

Draw twisting and draw winding

Depending on the application, yarns are processed at cold or hot temperatures (up to 260°C) and at yarn speeds up to 2000 m/min. The task of the separator roller in the drawing zone is to separate the individual yarn wraps. With this, the separator roller replaces the second of the two godets. The separator roller must be temperature resistant and, due to the high yarn speeds, must exhibit low vibration at high rotational speeds. The separator rollers easily absorb the strong radial forces resulting from the drawing operation.

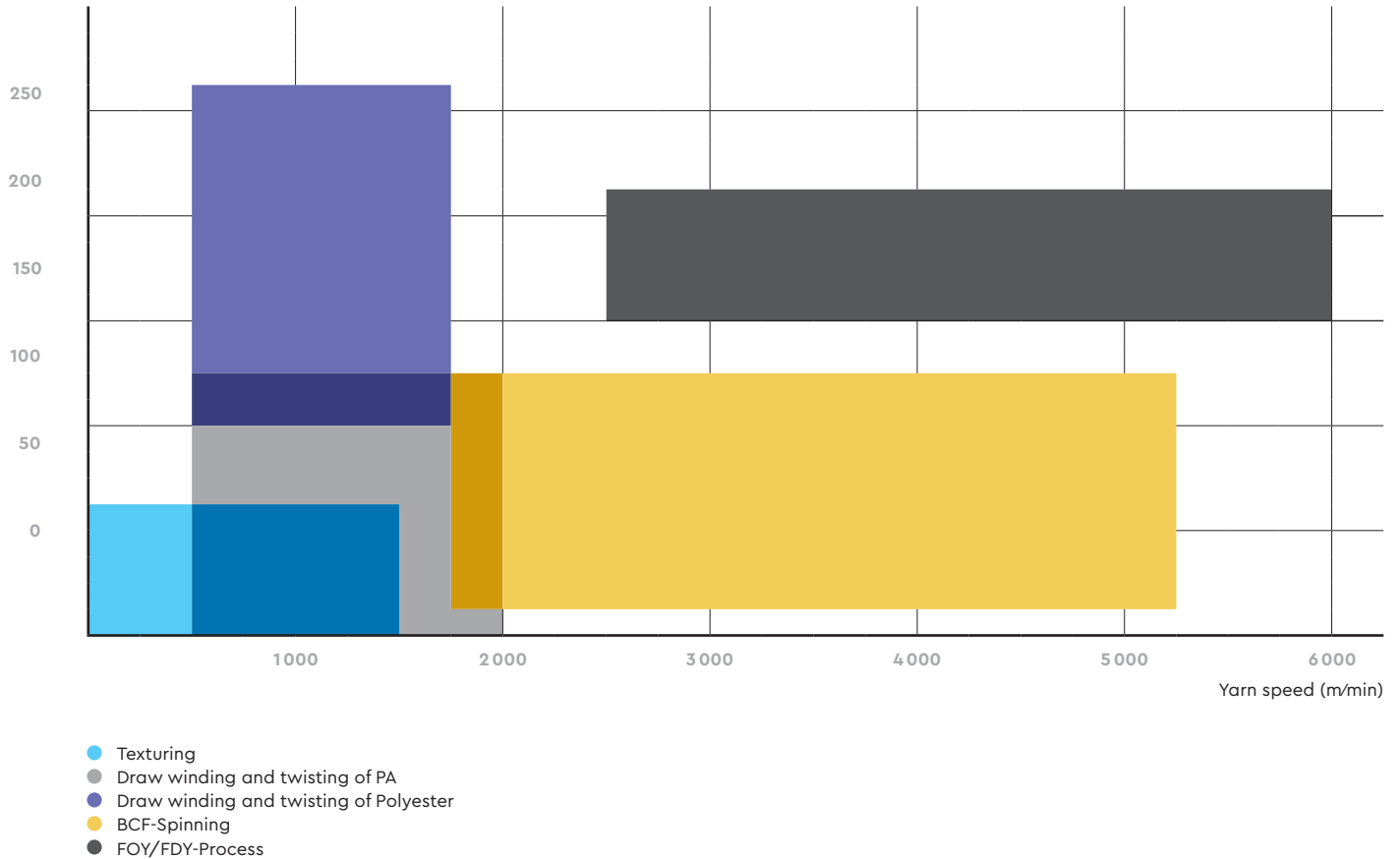
Spin-draw-texturing (BCF process)

With this process, yarn temperatures on the separator rollers can reach up to 140°C. For fine poly-amide yarns, yarn speeds are up to 5000 m/min. Temco Separator Rollers are used in several positions in the process and have different functions. In combination with the godet, they have the same task as in draw-twisting (see above); they also form a yarn wrap in the yarn path prior to the air jet and cooling drum. The extremely high yarn speeds during the process impose the highest demands on running stability and smooth operation of the separator rollers used. Occasionally, the bearings must withstand high draw forces. The stability of the bearing construction is, therefore, also an important factor.

Yarn speed and temperature

important factors in the design of Separator Rollers

Yarn temperature (°C)



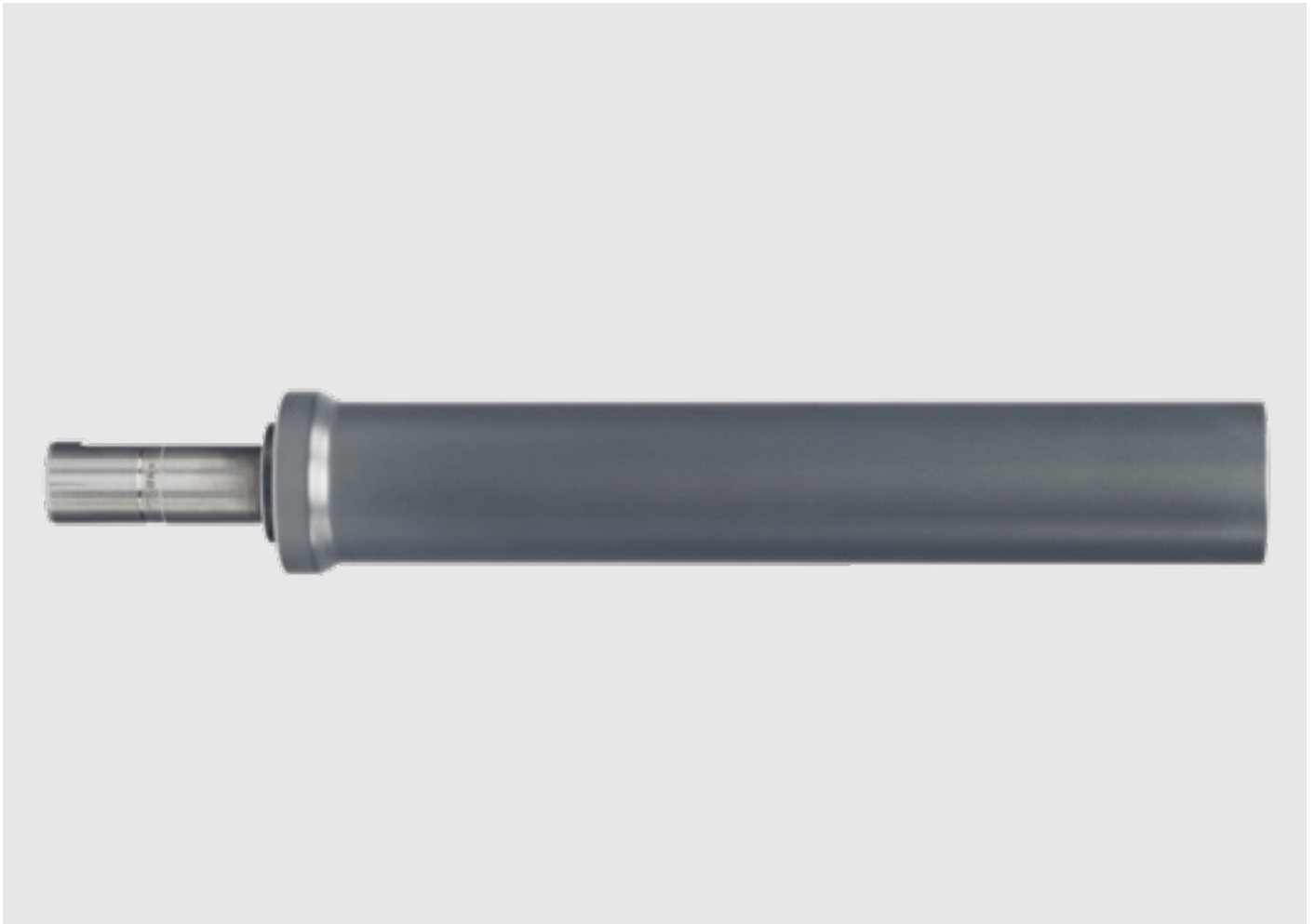
Separator rollers in the production process

Texturing

Separator rollers are used on many texturing machines for yarn separation at the yarn feed systems. Here, the smoothness of operation and durability are the most important criteria for separator rollers, since they are neither subjected to high temperatures or very high yarn speeds. For the processes described above, Saurer offers a broad range of separator rollers in various designs to meet all customer requirements.

Innovative product ideas for future process demands

With the support of many years' experience, Saurer continues to develop innovative solutions for separator roller use in very high speed or extremely high temperature processes. In high-speed processes, e.g. the production of polyamide yarns in the BCF process, separator rollers already successfully operate at speeds up to 5500 m/min to full customer satisfaction. Currently, intensive development work is being carried out to further increase process speeds for the future replacement of the expensive godets and air bearings. The use of separator rollers in textile and technical processes requires both a large amount of experience in bearing construction and extensive knowledge of the relevant processes. Particularly for demanding textiles or technical processes, it is important to rely on Saurer's know-how for optimum use of the textile production process.



Next generation separator rollers

To meet the demands of the market, Saurer has generated a new generation separator roller through continuous development of the proven separator rollers with different roller diameters and various dimensions.

Lubrication/sealing

The lifetime lubrication, which is tuned to the use, has already been proven for years and ensures smooth running even at very high speeds. The bearing is equipped with clearance seals and lids which prevent an air flow and the penetration of dirt securely.

Advantages

Through the new developed bearing damping with pre-stressed integrated bearing following characteristics will be achieved:

- Up to 85 % higher speeds in comparison to the previous designs
- Resonance free running
- Applicable for up to 50 % higher yarn tension forces in comparison to the previous designs
- Lower bearing friction and therefore less slippage of the yarn



Series VR22

The separator roller series VR22 are produced for speeds up to 5 000 m/min. The separator rollers have been developed for spin processes at low yarn temperatures (up to max. 70 °C) and high speeds.

Dimensions (mm)

Length of the roller shell	58.0 – 120.0
Total length	75.0 – 137.0
Length of the connection journal	14.5 – 25.0
Diameter	22.0



Series VR30, VR36, VR40

The separator roller series VR30, VR36 and VR40 are produced for speeds up to 2 000 m/min. The separator rollers can be used for spin processes with very high yarn temperatures up to maximum 260 °C.

Dimensions (mm)

Length of the roller shell	77.0 – 110.0
Total length	97.0 – 137.0
Length of the connection journal	14.5 – 24.0
Diameter	30.0/36.0/40.0



Series VR50

The separator roller series VR50 are produced for speeds up to 4 500 m/min and as special design for speeds up to 6 000 m/min. The separator rollers have been developed for spin processes POY/FDY/SDY (technical and non-technical yarns) and spin draw texturing BCF (for carpet yarns), which can be used for yarn temperatures up to 160 °C.

Dimensions (mm)

Length of the roller shell	150.0 – 245.0
Total length	215.7 – 285.0
Length of the connection journal	40.0 – 64.5
Diameter	50.0

Series VR60

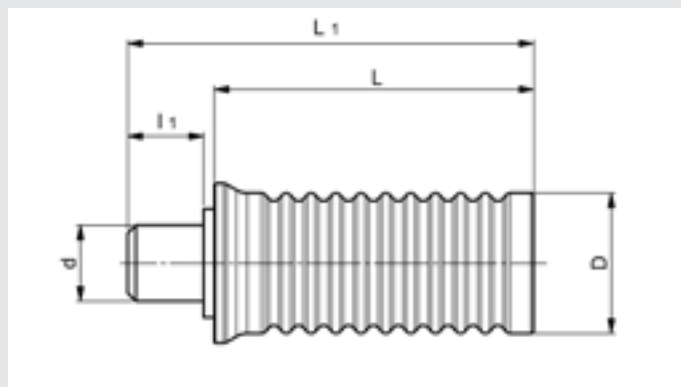
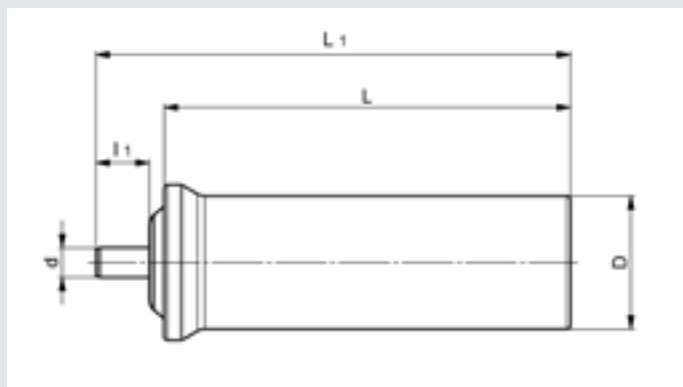
The separator roller series VR60 are produced for speeds up to 4 500 m/min and as special design for speeds up to 6 000 m/min. The separator rollers have been developed for spin processes POY/FDY/SDY (technical and non-technical yarns) and spin draw texturing BCF (for carpet yarns), which can be used for yarn temperatures up to 160 °C.

Dimensions (mm)

Length of the roller shell	238.0 – 320.0
Total length	7 278.0 – 360.0
Length of the connection journal	40.0
Diameter	60.0

Separator rollers VR

Separator rollers figures



Overview

Type	Color of Cap	*Max. yarn speed [m/min]	*Max. yarn temp. [°C]	*Max. radial load [N]	Dimensions D [mm]	L [mm]	L ₁ [mm]	d [mm]	l ₁ [mm]	Surface
VR2137-N**	●	1500	70	100	21.2	37	52.5	Ø8	15.5	HC
VR2143-N**	●	1500	70	100	21.2	43	58.5	Ø8	15.5	HC
VR2143-NT	●	1500	130	100	21.2	43	58.5	Ø8	15.5	HC
VR2147-3-N	●	1500	70	100	21.2	47	62.5	Ø8	11	HC
VR2147-3-NT	●	1500	130	100	21.2	47	62.5	Ø8	11	HC
VR2158-N**	●	1500	70	100	21.2	58	76.8	Ø8	18.8	HC
VR2158-NT	●	1500	130	100	21.2	58	76.8	Ø8	18.8	HC
VR2158-1-N**	●	1500	70	100	21.2	58	83	M8	13	HC
VR2158-1-NT	●	1500	130	100	21.2	58	83	M8	13	HC
VR2158-3-N**	●	1500	70	100	21.2	58	76.8	Ø8	14.5	HC
VR2158-3-NT	●	1500	130	100	21.2	58	76.8	Ø8	14.5	HC
VR2158-3-H	●	2000	70	100	21.2	58	76.8	Ø8	14.5	HC
VR2158-3-HT	●	2000	130	100	21.2	58	76.8	Ø8	14.5	HC
VR2177-N**	●	1500	70	100	21.2	77	95.8	Ø8	18.8	HC
VR2177-NT**	●	1500	130	100	21.2	77	95.8	Ø8	18.8	HC
VR2177-H	●	2000	70	100	21.2	77	95.8	Ø8	18.8	HC
VR2177-HT	●	2000	130	100	21.2	77	95.8	Ø8	18.8	HC
VR2177-1-N**	●	1500	70	100	21.2	77	102	M8	13	HC
VR2177-1-NT	●	1500	130	100	21.2	77	102	M8	13	HC

- = normal speed low temperature
- = normal speed high temperature
- = higher speed low temperature
- = higher speed high temperature

Overview

Type	Color of Cap	* Max. yarn speed [m/min]	* Max. yarn temp. [°C]	* Max. radial load [N]	Dimensions D [mm]	L [mm]	L ₁ [mm]	d [mm]	l ₁ [mm]	Surface
VR2177-3-N**	●	1500	70	100	21.2	77	95.8	Ø8	14.5	HC
VR2177-3-NT**	●	1500	130	100	21.2	77	95.8	Ø8	14.5	HC
VR2177-3-H	●	2000	70	100	21.2	77	95.8	Ø8	14.5	HC
VR2177-3-HT	●	2000	130	100	21.2	77	95.8	Ø8	14.5	HC
VR2177-17-N	●	1500	70	100	21.2	77	95.8	Ø8	14.5	Ceramic
VR2177-17-NT	●	1500	130	100	21.2	77	95.8	Ø8	14.5	Ceramic
VR2258-00**		4500	70	50	22	58	75	Ø8	14.5	HC
VR2275-00**		5000	70	50	22	75	100	Ø8	25	HC
VR2298-00		5000	70	50	22	98	115	Ø8	14.5	HC
VR22120-00**		5000	70	50	22	120	137	Ø8	14.5	HC
VR2577-00		800	180	100	25/21.2	77	95.5	Ø8	18.5	HC
VR2655		1100	80	200	26/24	55	80.2	M6	18.2	Ceramic
VR2659-02		1400	80	130	26/23	59	75	Ø14	14	Ceramic
VR3077-00		1500	260	120	30	77	97	Ø16	19	HC
VR3098-04		1500	260	120	30	98	118	Ø16	17	HC
VR3098-05		1500	260	120	30	98	127	Ø8	15.5	HC
VR3581-00		4000	150	110	35	81.3	105.6	Ø12.6	22.3	Ceramic
VR3670-00		4000	70	110	36	70	94.2	Ø16	22.2	HC
VR3690-03		1900	260	120	36	90	119	Ø8	15.5	HC
VR3698-07**		2000	260	190	36	98	118	Ø16	18	HC
VR36110-09**		1900	260	120	36	110	128.5	Ø8	14.5	HC
VR36110-11		4000	90	110	36	110	130	Ø16	18	HC
VR40110-07**		2000	260	190	40	110	137	Ø12	24	HC
VR50150-06**		4500	160	250	50	150	215.7	Ø32	64.5	HC
VR50210-05**		4000	160	250	50	210	255	Ø32	45	HC
VR50210-06		4000	160	250	50	210	255	Ø32	45	Ceramic
VR50245-06		4000	160	250	50	245	285	Ø32	45	HC
VR50245-07		4000	160	250	50	245	285	Ø32	40	Ceramic
VR50300-00-HS		5500	190	250	50	300	372.5	Ø26	67.5	Ceramic
VR54228-00		4000	160	250	54	228	287.5	Ø25.4	54	Ceramic
VR60240-07**		4700	160	550	60	238	278	Ø46	39	HC
VR60240-08		4700	160	550	60	238	278	Ø46	39	Ceramic
VR60280-00		4700	160	550	60	280	320	Ø46	39	Ceramic
VR60320-12**		4700	160	700	60	320	360	Ø46	39	HC
VR60320-13		4700	160	700	60	320	360	Ø46	39	Ceramic

* At coincidence of all three maximum values please contact us or fill in our checklist.

You will find the checklist under <http://temco.saurer.com/de/Products/Bearings/Separator-Rollers-VR/Downloads>

** = Standard types

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